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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/017,506

12/14/2001

Heinz Koppl

1406/308

5589

25297

7590

06/07/2006

JENKINS, WILSON, TAYLOR & HUNT, P. A.

3100 TOWER BLVD

SUITE 1200

DURHAM, NC 27707

EXAMINER

STEVENS, THOMAS H

ART UNIT

PAPER NUMBER

2123

DATE MAILED: 06/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>		<b>Applicant(s)</b>	
	10/017,506		KOPPL ET AL.	
	<b>Examiner</b>		<b>Art Unit</b>	
	Thomas H. Stevens		2123	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 7 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 27 March 2006.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input checked="" type="checkbox"/> Interview Summary (PTO-413)          |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. <u>5/26/06</u> .                                     |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____.  | 6) <input type="checkbox"/> Other: _____.                                   |

### **DETAILED ACTION**

1. Claims 1-9 were examined.

#### ***Continued Prosecution Application***

2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed 03/27/2006 on has been entered.

#### ***Section I: Final Rejection***

##### ***Claim Objections***

3. Claims 3 and 6 are objected to as being dependent upon a rejected base claim.
4. Claim 4 is objected to as being an improper multiple dependent claim.

#### ***Claim Rejections - 35 USC § 112***

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

6. Claim 3 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
7. Claim 3 recites the limitation " the adjustable modeling filter" in line 2. There is insufficient antecedent basis for this limitation in the claim.

***Claim Rejections - 35 USC § 102***

8. Claims 1-5,8-9 are rejected under 35 U.S.C. 102(b) as being anticipated by Wilkinson et al ("Assessment of UHF Power Amplifier Linearization by Measurement and Simulation (IEEE 1989)) (hereafter Wilkinson). Wilkinson teaches a communication system simulator for nonlinear signals coupled with Volterra series representation (abstract).

Claim 1. A simulation method (title) determining nonlinear signal distortion (pg. 60, right column, lines 1-5) in an analog circuit , which is to be tested, for processing discrete multitone signals (DMT), with the simulation method having the following steps: applying a discrete multitone signal, (abstract) which has a number of uniformly spaced carrier for data transmission in range, the analog be tested (pg. 60, right column, 6<sup>th</sup> paragraph), and to digital filter suppression the output signal from the analog circuit , (pg.62, right column, 1<sup>st</sup> paragraph) which be tested, from the output signal from the digital filter order to produce a difference signal, (c) adjustment of the filter until the difference signal a minimum, with the adjusted digital filter forming an equivalent circuit of the analog circuit (a plurality of FETs: pg.62, right column, 1<sup>st</sup> paragraph; pg. 60, left column 5<sup>th</sup> paragraph, lines 3-5)) (d) application the discrete multitone signal to the adjusted digital filter with least carrier frequency being suppressed, for measuring the intermodulation product of the adjusted digital filter (pg. 62, left column, paragraph 7)

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Claim 2. The simulation method as claimed in claim 1 (title; pg.62, right column, 1<sup>st</sup> paragraph) wherein multitone signal calculated from the measured intermodulation product (title; pg.62, right column, 1<sup>st</sup> paragraph).

Claim 3. The simulation method in claim 1 or 2, (title; pg.62, right column, 1<sup>st</sup> paragraph) wherein the adjustable modeling filter discrete-time Volterra filter (abstract), or a neural network.

Claim 4. The simulation method as claimed of the preceding claims, (title; pg.62, right column, 1<sup>st</sup> paragraph) wherein the adjustable modeling filter (Design choice: making adjustable; see *In re Stevens*, 212 F.2d 197, 101 USPQ 284 (CCPA 1954)) is connected in parallel with the analog circuit, which is to be tested.

Claim 5. The simulation method as claimed in one the preceding claims, (title; pg.62, right column, 1<sup>st</sup> paragraph) wherein adjusted modeling filter (Design choice: making adjustable; see *In re Stevens*, 212 F.2d 197, 101 USPQ 284 (CCPA 1954)), which forms equivalent circuit of analog circuit connected to further adjusted modeling filters, which form equivalent circuits further analog circuits, in order generate an overall equivalent circuit for an analog overall circuit (pg. 60, left column, 5<sup>th</sup> paragraph).

Claim 8. A test arrangement for determining nonlinear (abstract) signal distortion (pg. 60, right column, lines 1-5) of analog circuit elements of signal processing circuit for

signal processing of DMT signals having: (a) a signal generator for producing a discrete multitone signal (b) (abstract) adjustable modeling filters (Design choice: making adjustable; see *In re Stevens*, 212 F.2d 197, 101 USPQ 284 (CCPA 1954)) which are each connected in with associated analog circuit element (a plurality of FETs: pg.62, right column, 1<sup>st</sup> paragraph; pg. 60, left column 5<sup>th</sup> paragraph, lines 3-5)) , with the signal inputs of the modeling filters and of the analog circuit elements being connected to the signal generator (c) subtraction circuits, which each subtract the output from a modeling filter from the output signal from the associated analog circuit element in order to form a difference signal; (d) an adjustment circuit, which compares the difference signals with a nominal value and adjust the modeling filters (Design choice: making adjustable; see *In re Stevens*, 212 F.2d 197, 101 USPQ 284 (CCPA 1954)) until the difference signals match the nominal value (pg. 61, left column, last paragraph, lines 16-19); and having (e) a measurement circuit, which is connected to the outputs of the modeling filters (pg. 61, right column, lines 19-28) for measuring the interconnection products (pg. 62, left column, paragraph 7) of the adjusted modeling filters .

Claim 9. The test arrangement as claimed in claim 8, (abstract) wherein the test circuit is followed by a calculation circuit (32) for calculating the multitone signal power ratio of the output signals, which are emitted from the modeling filter (examiner assumes applicants are disclosing pg.6, lines 24-30 of the specification: pg. 62, left column, 4<sup>th</sup> paragraph).

***Claim Rejections - 35 USC § 103***

9. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

10. Claim 6 and 7 are rejected under 35 U.S.C. 103 (a) as obvious by Wilkinson et al., (IEEE 1989) (hereafter Wilkinson), in view of Hjartarson et al., (U.S. Patent 6,295,343 (2001)) (hereafter Hjartarson). Wilkinson and Volterra are analogous art since both teach electronic circuits.

At the time of invention, it would have been obvious to one of ordinary skill in the art to use the voice card and XDSL line care functions Hjartarson in the communication signal simulator for non-linear signals of Wilkinson because Hjartarson teaches a method to mitigate some of the disadvantages associated with current integrated xDSL and POTS equipment (Hjartarson: column 3, line 66-67).

Claim 6. The simulation method as claimed preceding claims, (Wilkinson: title; pg.62, right column, 1<sup>st</sup> paragraph) wherein the analog overall circuit a DSL-SLIC circuit (Hjartarson: column 5, lines 5-15).

Claim 7. The simulation method as claimed one of the preceding claims, (Wilkinson: title; pg.62, right column, 1<sup>st</sup> paragraph ; Hjartarson: column 5, lines 5-15) wherein discrete multitone signals are generated in a signal generator (1).

### ***Section II: Response to Applicants' Arguments***

11. Applicants filed an RCE on 03/27/2006 but were non-responsive to the issues outstanding from the advisory action 02/07/2006. Rejections stands.



***Conclusion***

12. This is a continuation of applicant's earlier Application No. 10/017,506. All claims are drawn to the same invention claimed in the earlier application and could have been finally rejected on the grounds and art of record in the next Office action if they had been entered in the earlier application. Accordingly, **THIS ACTION IS MADE FINAL** even though it is a first action in this case. See MPEP § 706.07(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no, however, event will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

***Correspondence Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mr. Tom Stevens whose telephone number is 571-272-3715, Monday-Friday (8:00 am- 4:30 pm EST).

If attempts to reach the examiner by telephone are unsuccessful, please contact examiner's supervisor Mr. Paul Rodriguez 571-272-3753. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>.. Answers to questions regarding access to the Private PAIR system, contact the Electronic Business Center (EBC) (toll-free (866-217-9197)).

May 25, 2006

TS



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